

Amendments to th Claims:

Following is a complete listing of the claims pending in the application, as amended:

1-20. (Canceled.)

21. (New) A method for enabling a client device to communicate with a server device over a communications link, the method comprising the steps of:

establishing a communicative connection with the server device;

after establishing the communicative connection, transmitting to the server device a use-command requesting the server device to provide use information that describes how to invoke a specified one of multiple services offered by the server device;

receiving the use information for the specified service from the server device, the use information including a description of one or more parameters that can be used when invoking the specified service; and

after receiving the use information, transmitting a service-command to the server device requesting the server device to invoke the specified service, the service-command specified in a manner based on the description included in the received use information and so as to include a specified value for each of one or more of the described parameters, the included values for those described parameters for use by the server device with the invoking of the specified service.

22. (New) The method of claim 21 wherein the received use information for the specified service further includes identifications of permissible values for the described parameters, and wherein each of the values specified in the service-command for one of the described parameters is one of the permissible values for that described parameter.

23. (New) The method of claim 21 wherein the received use information for the specified service further includes an indication of a type for each of the described parameters, and wherein each of the values specified in the service-command for one of the described parameters is a value of the type indicated for that described parameter.

24. (New) The method of claim 21 wherein the client device does not have access to information on how to invoke the specified service before the receiving of the use information for the specified service, and including learning how to perform the invoking of the specified service based on the received use information.

25. (New) A computer-implemented method for enabling a client to communicate with a server in order to learn how to use services, the method comprising, under control of the client:

 sending to the server a request to provide information identifying how to use one or more of multiple distinct services provided externally to the client;

 receiving information in response to the request that identifies how to use at least one of the multiple services;

 learning how to use one or more of the at least one services based on the received information, those learned services such that the client lacked an ability to use those services prior to the learning; and

 after the learning, using one or more of the learned services in a manner enabled by the learning for those services.

26. (New) The method of claim 25 wherein the using of one of the learned services includes invoking that learned service on the server.

27. (New) The method of claim 25 wherein the using of one of the learned services includes requesting that the server provide that learned service for the client.

28. (New) The method of claim 25 including, in response to the using of one of the learned services, receiving information generated by provision of that learned service by a server.

29. (New) The method of claim 25 including, after the using of one of the learned services that is provided by a server, receiving a status response from the server that indicates whether the providing of the learned service was successfully completed.

30. (New) The method of claim 25 wherein the received information for one of the learned services that is used includes identifications of one or more parameters for use with that learned service, and wherein the using of that learned service includes requesting provision of that learned service based on specifications for one or more of the identified parameters.

31. (New) The method of claim 30 wherein the received information for the learned service whose provision is requested includes identifications of permissible values for the identified parameters, and wherein the specifications for the identified parameters during the requesting of the provision of that learned service include a specified permissible value for each of those identified parameters.

32. (New) The method of claim 31 wherein the identification of the permissible values for one of the identified parameters is an enumerated set of multiple value choices.

33. (New) The method of claim 30 wherein the received information for the learned service whose provision is requested includes an indication of a type for each of one or more of the identified parameters, and wherein the specifications for the identified parameters during the requesting of the provision of that learned service

include a specified value for each of those identified parameters that is of the type indicated for that identified parameter.

34. (New) The method of claim 30 wherein the received information identifying how to use one of the used learned services further includes a description of the identified parameters.

35. (New) The method of claim 25 wherein the information received for each of the at least one learned services includes multiple parameters that are required when invoking that learned service, and wherein the using of each of the one or more learned services includes invoking that learned service with specified values for each of the multiple required parameters for that learned service.

36. (New) The method of claim 25 wherein the request sent to the server includes a use-command.

37. (New) The method of claim 25 including, under control of the server:
receiving the sent request from the client to provide information identifying how to use one or more of the multiple services; and
in response to the received request, sending to the client the information that identifies how to use at least one of the multiple services.

38. (New) The method of claim 25 wherein the using of one of the learned services includes executing software on the server to provide that learned service for the client.

39. (New) The method of claim 25 wherein each of the multiple distinct services are provided by the server.

40. (New) The method of claim 25 including, prior to the sending of the request for information identifying how to use one or more of the services, receiving information from a server that provides identifications of the multiple services, and wherein the sending of the request includes one of the provided identifications for a service in such a manner as to request information identifying how to use that service.

41. (New) The method of claim 25 wherein the client is an application executing on a client device.

42. (New) The method of claim 41 wherein the server is an application executing on a server device.

43 (New) The method of claim 42 wherein the client device and the server device are distinct devices.

44. (New) The method of claim 42 wherein the client device further includes a server application executing on the client device, and further including, under control of the server application, providing an additional service to one or more other clients in response to received requests.

45. (New) The method of claim 25 wherein the client and the server are both part of a client/server device.

46. (New) The method of claim 25 wherein the client and server are remote and communicate with each other over a network.

47. (New) The method of claim 46 wherein the network is the Internet.

48. (New) The method of claim 25 wherein the client is using a first protocol for the sending of the request to the server and the receiving of the information in

response, and including switching to a distinct second protocol for additional communications with the server based on issuance of a native-command.

49. (New) The method of claim 48 wherein the using of at least one of the learned services is performed after the switching to the second protocol.

50. (New) The method of claim 48 wherein the second protocol is a proprietary protocol shared by the client and the server.

51. (New) The method of claim 25 wherein the learning of the services based on the received information is performed automatically after the receiving of the information.

52. (New) The method of claim 51 wherein the using of the learned services is performed automatically after the learning of those services.

53. (New) A server computing device configured to enable clients to learn how to use services, comprising:

a network interface configured to enable communications with each of multiple remote clients; and

one or more memories containing instructions for configuring the server device to, for each of the multiple clients,

send to the client information describing how to use one or more of multiple distinct services available externally to the client, the sent information sufficient to enable the client to learn how to use those one or more services;

receive from the client a request to provide a specified one or more of the multiple services for the client, the request specified in a manner based on the information sent to the client; and

in response to the request, facilitate providing of the specified services to the client.

54. (New) The computing device of claim 53 wherein the server device provides the multiple services to the clients, and wherein the facilitating of the providing of a specified service for a client includes executing software corresponding to the specified service in one or more of the memories.

55. (New) The computing device of claim 53 wherein the sending to each of the clients of information that describes how to use one or more of the multiple services is performed in response to a request from that client that identifies those one or more multiple services.

56. (New) The computing device of claim 53 wherein the instructions further configure the server device to, prior to the request from one of the clients that identifies the one or more services for which the information describing how to use those services will be sent to the client, sending to that client an identification of each of the multiple available services so as to enable that client to generate that request that identifies those one or more services.

57. (New) The computing device of claim 53 wherein the facilitating of the providing of a specified service to a client includes sending to that client information generated by the providing of the specified service.

58. (New) The computing device of claim 53 wherein each of the multiple clients are remote client devices accessible to the server device over the Internet via the network interface, and wherein the sending of the information to the clients is performed via the network interface.

59. (New) The computing device of claim 53 wherein one or more of the memories further contain instructions for configuring the server device to operate as a client to another server device by requesting that the another server device provide a specified service to the server device and by receiving a response to the requesting.

60. (New) The computing device of claim 53 wherein the communications with each of the multiple remote clients are initially performed using a first protocol, and wherein the instructions further configure the server device to switch to use of a second distinct protocol for additional communications with one of the remote clients in response to an indication.

61. (New) A method for enabling a client device and a server device to communicate over a communications link, the method comprising:

- under control of a client device, initiating establishment of a link layer connection between the client device and a specified server device;

- under control of the server device, establishing a data connection with the client device over the link layer connection by transmitting a tag line message to the client device that identifies a specified first data protocol with which the server device is capable of communicating, the established data connection based on the first data protocol; and

- subsequent to the establishment of the data connection,

- transmitting a service-command from the client device to the server device over the data connection, the service-command identifying a particular service to be performed by the server device;

- in response to receiving the service-command at the server device, initiating the requested service and transmitting a status-response to the client device over the data connection;

- determining that the client and server devices each have an ability to communicate using a second data protocol that is distinct from the first data protocol, the second data protocol native to the client and server devices;

- transmitting a native-command from the client device to the server device over the data connection that indicates to switch to use of the native second data protocol; and

- in response to the native-command,

terminating the established data connection based on the first data protocol;

establishing a second data connection between the client and server devices over the link layer connection that is based on the native second data protocol; and

exchanging one or more subsequent communications between the client and server devices over the second data connection.

62. (New) The method of claim 61 including, after the exchanging of the subsequent communications over the second data connection, re-establishing a data connection between the client and server devices over the link layer connection that is based on the first data protocol and exchanging one or more subsequent communications between the client and server devices over the re-established data connection.

63. (New) A computer-implemented method for enabling a client and a server to communicate over a communications link, the method comprising:

initiating establishment of a link connection between the client and the server;

initiating establishment of a first data connection between the client and the server over the link connection based on a shared ability of the client and the server to use a specified first data protocol, the first data connection based on the first data protocol;

after the establishment of the first data connection, exchanging one or more communications between the client and the server over the first data connection related to providing of services by the server for the client, the exchanged communications using the first data protocol;

determining that the client and the server have a shared ability to use a second native data protocol that is distinct from the first data protocol;

after the exchanging of the one or more communications over the first data connection, initiating a switch from the first data connection to a second data

connection between the client and the server over the link connection, the second data connection based on the native data protocol; and

after the switch to the second data connection, exchanging one or more additional communications between the client and the server over the second data connection, the exchanged additional communications using the native data protocol.

64. (New) The method of claim 63 including, after the exchanging of the additional communications over the second data connection, switching back to a data connection between the client and the server that is based on the first data protocol and exchanging additional communications between the client and the server using the first data protocol over that data connection.

65. (New) The method of claim 64 wherein the additional communications exchanged between the client and the server after the switching back to the data connection based on the first data protocol are related to the providing of services by the server for the client.

66. (New) The method of claim 63 wherein the native data protocol is proprietary to the client and the server.

67. (New) The method of claim 63 wherein the initiating of the switch from the first data connection to a second data connection is based on issuance of a native command by one or more of the client and the server.